

REMARKS

Reconsideration and allowance of this application are respectfully requested in light of the above amendments and the following remarks.

Figs. 1-11 have been amended to include legends identifying the drawings as related art and, thereby, overcome the applied objections.

Claims 42, 43, 47, 48, 52-61, 63, and 65 have been amended. The amendments have been drafted to provide greater clarity and to overcome the applied objection and indefiniteness rejections.

Claims 42, 43, 45, 47, 53, 54, 56, 58, and 63 were rejected, under 35 USC § 102(e), as being anticipated by Dimou et al. (MAC Scheduling for Uplink Transmission in UMTS WCDMA, IEEE, 2001). Claims 44, 46, 48-52, 55, 57, 59-62, 64, and 65 were rejected, under 35 USC § 103(a), as being unpatentable over Dimou in view of Belaiche et al. (US 2002/0136181). The Applicants respectfully traverse these rejections as follows.

Claim 42 defines a data transmission method that: (1) establishes a radio bearer between a mobile terminal and a radio access network, (2) receives, at the mobile terminal, radio bearer mapping information from the radio access network that indicates one of a plurality of scheduling modes of a logical channel, and (3) maps the radio bearer to the logical channel.

The Office Action proposes that Dimou discloses, presumably in Table 1, indicating the scheduling mode of a logical channel according to the type of traffic the channel will support (see Office Action page 4, lines 6-8). Additionally, the Office Action proposes that Dimou inherently discloses the communication of such a scheduling mode indication from a radio access network to a mobile terminal (see page 4, lines 2-4). More specifically, the Office Action

proposes that a UMTS radio bearer establishment procedure inherently requires communicating a scheduling mode indication from a radio access network to a mobile terminal (see page 4, lines 2-5).

Although Dimou may disclose, in Table 1, the existence of different types of traffic, nowhere does Dimou disclose that different types of traffic may be communicated on a single logical channel such that scheduling of the traffic type must occur. Instead, Dimou expressly discloses that a first logical channel carries voice traffic, a second logical channel carries signaling traffic, and a third logical channel carries "www" traffic (see Dimou Table 1 and section V(A), second sentence). Thus, because Dimou does not disclose scheduling different types of traffic on a logical channel, it necessarily follows that Dimou would have no reason to disclose, and Dimou does not disclose, the Applicants' claimed subject matter of indicating the scheduling mode of a logical channel according to the type of traffic the channel will support.

Moreover, Dimou further discloses simulating three MAC scheduling algorithms based on the fixed assignments of traffic types to the logical channels, as mentioned above (see abstract and section V(B), second sentence). However, Dimou does not disclose that the simulation involves both a radio access network and a mobile terminal. Thus, the Office Action's proposal that a UMTS radio bearer establishment procedure inherently requires communicating a scheduling mode indication from a radio access network to a mobile terminal has no bearing on what Dimou's disclosure inherently discloses, since Dimou does not disclose simulating a UMTS radio bearer establishment procedure between a radio access network and a mobile terminal. Additionally, Office Action's provides no evidence or reasoning to support its proposal that a

UMTS radio bearer establishment procedure inherently requires communicating a scheduling mode indication from a radio access network to a mobile terminal.

Furthermore, due to the fact that Dimou discloses a scheduling algorithm simulation rather than a practical use of the scheduling algorithm, Dimou does not disclose the Applicants' claimed subject matter of establishing a radio bearer between a mobile terminal and a radio access network and mapping such a radio bearer to a logical channel.

In summary, Dimou does not disclose, either expressly or inherently, the Applicants' claimed subject matter of: (1) establishing a radio bearer between a mobile terminal and a radio access network, (2) receiving, at the mobile terminal, radio bearer mapping information from the radio access network that indicates one of a plurality of scheduling modes of a logical channel, and (3) mapping the radio bearer to the logical channel.

Accordingly, the Applicants submit that Dimou does not anticipate the subject matter defined by claim 42.

Independent claims 53 and 63 similarly recite the above-mentioned subject matter distinguishing method claim 42 from Dimou, but claim 53 does so with respect to an apparatus and claim 63 does so with respect to a computer readable medium. Therefore, allowance of claims 42, 53, and 63 and all claims dependent therefrom is deemed to be warranted.

To promote a better understanding of the differences between the instant claimed subject matter and the teachings of the applied references, the Applicants provide the following additional remarks.

Dimou discusses scheduling issues in a MAC layer of a UMTS radio network (see Dimou abstract). In this regard, Dimou proposes three different scheduling algorithms (see

sections III(a)-(c)), the performance of which is tested in a simulator and the simulation results are presented.

In section II, Dimou more closely describes the MAC layer functions in UMTS, in particular with respect to their logical channel-to-transport channel mapping and the related TFC selection procedure. In the last lines of section II, Dimou indicates that the TFC selection is based on the logical channel priorities of the logical channels to be mapped to the transport channels. Next, in section III, the proposed scheduling algorithms in the MAC simulator are outlined in more detail. The results of the simulations based on the specific configurations are outlined more closely in section V(A).

Although Dimou discloses different scheduling algorithms, Dimou does not disclose their simultaneous use in a mobile communication system, so as to require signaling the scheduling mode used for a logical channel. Instead, Dimou discloses the results of individually testing each of the three proposed scheduling mechanisms in a simulator.

Hence, Dimou does not in fact not relate to a real-life mobile communication system that is capable of using different scheduling modes. Accordingly, Dimou does not inherently disclose signaling a scheduling mode from a radio access network to a mobile terminal, as proposed in the Office Action. At most, as relevant to the Applicants' claimed subject matter, Dimou seems to show that logical channels have a priority and are mapped to the transport channel.

As per independent claim 42, Dimou fails to show the claimed subject matter of establishing a radio bearer between a mobile terminal and a radio access network. No passage in Dimou recites this feature. Given that the document relates merely to a simulator, there is no

radio bearer establishment necessary, so that this feature cannot be inherent to the proposed simulation, contrary to the indication in the Office Action.

Dimou further fails to disclose the claimed subject matter of receiving, from a radio access network, information including a priority that is assigned to a logical channel mapped to a transport channel and indicating a scheduling mode out of plural scheduling modes of a logical channel. As indicated above, Dimou relates to a simulator that simulates a UMTS system employing analyzed scheduling algorithms. However, Dimou does not mention that there are plural scheduling modes of a logical channel (i.e., only one scheduling mode is tested at a time).

In view of being related to a simulator and also considering that there is only one single scheduling mode tested at a time, there is no need for Dimou to disclose signaling any information on the priority of a logical channel or the scheduling mode, out of plural scheduling modes of the logical channel, from the radio access network to a mobile terminal.

Concerning indicating different scheduling modes, the Office Action refers to Table 2 of Dimou, which shows the "Total bit rate and transmission time interval (TTI) per transport channel simulated." The Applicants believe the Office Action intended to refer to Table 1.

Table 1 shows the "Traffic type supported and priority per logical channel implemented in the example." In contrast to the Office Action's proposal, Table 1 shows that different logical channels, numbered #1, #2 and #3, carry different traffic types and have different priorities; however, Table 1 does not show different scheduling modes.

Thus, Dimou shows different logical channels having different priorities but does not disclose transmitting and receiving information on the priority of a logical channel.

Dimou also fails to disclose the Applicants' claimed feature of mapping a radio bearer to a logical channel based on received information. As Dimou provides no disclosure of receiving information on logical channel priority and scheduling mode, there is consequently also no teaching in Dimou that this information is used in mapping a radio bearer to a logical channel. Furthermore, since Dimou fails to disclose the claimed subject matter of establishing a radio bearer, it follows that Dimou also fails to disclose mapping a radio bearer to a logical channel. With respect to this feature, the Office Action cites Dimou's section IV(A). This section, however, teaches that a mapping between logical and transport channels is performed, which is not the same as mapping a radio bearer to a logical channel.

Similar differences between Dimou and the claimed subject matter exist for the other independent claims. Belaiche does not cure the deficiencies of Dimou with respect to this subject matter.

Furthermore, the Applicants disagree with the Office Action's proposal that Belaiche discloses setting a flag indicating a scheduling mode (see Office Action sections 4.1). Belaiche's table in paragraph 18 does show a flag, but this flag is not at all related to scheduling or a scheduling mode. As becomes apparent from paragraph [0015], Belaiche's flag indicates, for each logical channel in TM mode, the way in which data blocks should be considered by the medium access control unit. Thus, Belaiche's flag is not related to the indication of a scheduling mode, as proposed in the Office Action. Therefore, allowance of claims 44 and 55 is deemed to be warranted for this independent reason.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

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